ECONS 502: Macroeconomic Theory Core (II)
Washington State University
Spring 2018
(Syllabus, Last Update: January 10, 2018)

Instructor: Can Tian, Hulbert 111G, tiancan.econ@gmail.com or can.tian@wsu.edu.

Teaching Assistant: TBD.

Time and Location: TU, TH, 2:50 – 4:05 pm (3 Credit), Johnson Hall C105.

Instructor Office Hours: TU, TH, 12:25 – 1:25 pm , or by appointment, Hulbert 111G.

TA Office Hours: TBD

TA Recitation Section: TBD as needed.

Recommended Preparation: Intermediate Microeconomics and Macroeconomics or more, and Econs 500.

Course Description:

This course is the continuation of 500 and its materials can be roughly divided into two parts. In the first part, we continue the study of models on competitive markets with infinite horizon and uncertainty. We examine trading among heterogenous agents and introduce financial assets into the basic framework. In the second part, we study a different set of models with various kinds of market frictions to understand labor markets and then money. We will also examine relevant policies.

After completing the course, a successful student should be able to understand the basic language and tools of modern macroeconomic research.

Textbooks and Mandatory Readings

I will post necessary lecture notes and useful materials on the course website.

- Krueger, Dirk. *Macroeconomic Theory*. 2014. (Ch 2,6, for sections I–II)
- Krusell, Per. *Real Macroeconomic Theory*. 2014. (Ch 12, for sections II)
- Williamson, Stephen. *Notes on Search*. 2010. (for sections III–IV)
- Walsh, Carl E. *Monetary Theory and Policy*. Forth Edition, MIT press, 2017. (for section IV)

References

The following books are useful for some topics.

- Ljungqvist, Lars and Thomas J. Sargent. *Recursive Macroeconomic Theory*, Third Edition, MIT Press, 2012.

- Petrosky-Nadeau, Nicolas and Etienne Wasmer.*Labor, Credit, and Goods Markets: The Macroeconomics of Search and Unemployment*. MIT Press, 2017. (for section III)
- Gali, Jordi.*Monetary policy, inflation, and the business cycle: an introduction to the new Keynesian framework and its applications*, Second Edition, Princeton University Press, 2015. (for section IV)
- Romer, David, *Advanced Macroeconomics*, Forth Edition, Princeton University Press, (for section III-IV)

This is an excellent (in my opinion the best) website to learn how to use Python and/or Julia in quantitative economic research: http://quant-econ.net/index.html

Course Website: WSU Blackboard (learn.wsu.edu) and log in with your university netid. I will post class announcement, lecture notes, slides, problem sets, answers to problem sets, and additional readings to the website.

Workload Expectation: Students are expected to attend all lectures. Meanwhile, you should anticipate 5–15 hours of weekly study. I strongly suggest you form study groups because regular group discussions can be extremely helpful in the learning process. Please do not be afraid to ask questions.

Grading and Exams: Homework assignments, two in-class midterm exams and a final exam jointly determine the final grade as follows.

	Total Numerical Grade (100 Points)			
Item	Assignments	Midterm I	Midterm II	Final
Points	20	20	20	40

I plan to use the following scale to map your numerical grade into the letter grade:

Letter Grade	A	A-	B+	B	B- or below
Points	80-100	75-79.9	70-74.9	60-69.9	≤ 59.9

I will maintain some flexibility to these guidelines, especially for difficult exams.

There will be around 3 to 5 assignments for the course. Always write your answers legibly and orderly. You are encouraged to type up your answers, preferably using LaTeX. The assignments are due in class before the lecture at the announced date. Homework assignments will be coarsely graded on a scale of 1 to 5, with 5 being the full score. Late problem sets will receive a grade of **0**. To allow for the possibility of unexpected emergency, I will drop one lowest homework score in calculating your final grade.

Group discussion in solving the homework assignments is strongly encouraged, but each student is expected to write their own answers in their own words. If you encounter any difficulty, you can get help from your fellow students, your TA (if available), and/or me.

The first in-class midterm exam is currently and tentatively scheduled to be on **Thursday, Feb 15th**, and the second on **Thursday, Mar 22nd**. The final exam will take place in class at the following time: **TBD**.

All exams will be *closed-book and closed-notes*. The final exam is cumulative.

There will be NO makeups for the midterm exams. If you fail to take one or both of them, the corresponding weight will be added to the final exam.

Additional Readings: In addition to readings from the textbook, readings from academic publications will occasionally be posted to the course web site whenever necessary. Because the lectures cover only the key points of each topic, reading and studying the textbook and the assigned papers in a timely fashion is an essential part of the course.

Student Learning Outcomes and Assessment: The following table summarizes targeted learning outcomes and assessment methods.

At the end of this course, students should be able to:	The following will address this outcome:	This outcome will be evaluated primarily by:
Understand and explain the analytical derivations and arguments commonly used in the models of dynamic stochastic general equilibrium, labor markets and monetary theory and policies.	Lectures and assigned readings	Written responses in problem sets, midterms, and final exam
Solve PhD-core-level macroeconomic problems	Problem sets	Problem sets, midterms, and final exam
Formulate the widely used models and know how to apply them in their own research.	Lectures	Written responses in problem sets, midterms, and final exam

Academic dishonesty: Academic integrity will be strongly enforced in this course. Students found responsible for academic integrity violations may receive an F on the particular assignment or exam, as well as an F for the course. Serious and/or repeated offenses may result in referral to the Office of Student Standards and Accountability and expulsion from WSU. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that you read and understand these definitions.

WSU Reasonable Accommodation Policy: Students with Disabilities: Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call the Access Center (Washington Building 217; 509-335-3417) to schedule an appointment with an Access Advisor. All accommodations MUST be approved through the Access Center. For more information contact a Disability Specialist on the Pullman campus: 509-335-3417, http://accesscenter.wsu.edu, Access.Center@wsu.edu.

Safety and Emergency Notification: Washington State University is committed to enhancing the safety of the students, faculty, staff, and visitors. It is highly recommended that you review the Campus Safety Plan (http://safetyplan.wsu.edu/) and visit the Office of Emergency Management web site (http://oem.wsu.edu/) for a comprehensive listing of university policies, procedures, statistics, and information related to campus safety, emergency management, and the health and welfare of the campus community.

Course Outline

The lecture is intended to cover selected topics below. Additional topics may be included if time permits. The schedule is tentative and subject to change.

I. Decentralized Deterministic Pure Exchange Economy (1 week)

1. A Simple Two-Period Model
2. Infinite-Horizon Models

II. Uncertainty in Decentralized Economy and Asset Pricing (3 weeks)

1. Uncertainty in Two-Period Models
   - Arrow-Debreu Equilibrium
   - Sequential Markets Equilibrium, Arrow Securities, Complete Financial Market, Asset Pricing
2. Uncertainty in Infinite-Horizon Models
   - Arrow-Debreu Equilibrium
   - Sequential Markets Equilibrium, Arrow Securities, Complete Financial Market, Asset Pricing

III. Unemployment and Policies (3–4 weeks)

1. McCall Job Search Model (One-sided Search and Decision)
2. Optimal Unemployment Insurance
3. Random Matching and Search (Two-sided Search and Equilibrium)

IV. Monetary Theory and Policies (5–6 weeks)

1. Money as Medium of Exchange (Monetary Search)
2. Money in Utility (MIU) Model
3. Cash-In-Advance (CIA) Model
4. (Optional) Foundation of Sticky Price and Wage
5. Basic New Keynesian Model
6. Monetary Policy